

**In the Claims**

Applicant has submitted a new complete claim set showing marked up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Please cancel claims 1-35 and 38-53 without prejudice or disclaimer.

Please add new claims 54-72 as indicated below:

1.-35. (Canceled)

36. (Original) A method for determining whether complete building blocks of a query sequence of chemical units match complete building blocks of a polysaccharide, the query sequence being represented by a first data structure, tangibly embodied in a computer-readable medium, including an identifier that includes one or more fields, each field for storing a value corresponding to a complete building block of the query sequence, the polysaccharide being represented by a second data structure, tangibly embodied in a computer-readable medium, including an identifier that includes one or more fields, each field for storing a value corresponding to a complete building block of the polysaccharide, the method comprising acts of:

(A) generating at least one mask based on the values stored in the one or more fields of the first data structure;

(B) performing at least one binary operation on the values stored in the one or more fields of the second data structure using the at least one mask to generate at least one result; and

(C) determining whether the complete building blocks of the query sequence match the complete building blocks of the polysaccharide based on the at least one result.

37. (Original) The method of claim 36, wherein each of the one or more fields of the first and second data structures is a bit field.

38.-53. (Canceled)

54. (New) The method of claim 36, wherein each of the one or more fields of the first and second data structures is a non-character based field.

55. (New) The method of claim 36, wherein each of the identifiers of the first and second data structures is represented as a numerical identifier.

56. (New) The method of claim 55, wherein each of the identifiers of the first and second data structures is represented as a single digit hexadecimal number.

57. (New) The method of claim 55, wherein each of the identifiers of the first and second data structures is represented as a decimal value.

58. (New) The method of claim 57, wherein the decimal value may be reduced to a plurality of prime divisors.

59. (New) The method of claim 36, wherein the complete building block of the polysaccharide is a monosaccharide.

60. (New) The method of claim 36, wherein the complete building block of the polysaccharide is a disaccharide.

61. (New) The method of claim 36, wherein the value corresponding to the complete building block of the polysaccharide corresponds to one or more properties of the complete building block of the polysaccharide.

62. (New) The method of claim 61, wherein the one or more properties comprises the identity of the complete building block of the polysaccharide.

63. (New) The method of claim 61, wherein the one or more properties comprises the exact chemical structure as defined by the basic building block of the polysaccharide.

64. (New) The method of claim 61, wherein the one or more properties comprises the charge of the complete building block of the polysaccharide.

65. (New) The method of claim 61, wherein the one or more properties comprises the molecular weight of the complete building block of the polysaccharide.

66. (New) The method of claim 61, wherein the one or more properties comprises the nature and degree of sulfation of the complete building block of the polysaccharide.

67. (New) The method of claim 61, wherein the one or more properties comprises the nature and degree of acetylation of the complete building block of the polysaccharide.

68. (New) The method of claim 61, wherein the one or more properties comprises the nature or identity of substituents of the complete building block of the polysaccharide.

69. (New) The method of claim 61, wherein the act of determining includes an act of determining that one or more properties of the complete building block of the query sequence match the one or more properties of the complete building block of the polysaccharide when the at least one result has a non-zero value.

70. (New) The method of claim 36, wherein the complete building block of the polysaccharide is a complete building block of a heparin-like glycosaminoglycan.

71. (New) The method of claim 36, wherein the at least one binary operation includes at least one logical AND operation.

72. (New) The method of claim 37, wherein the at least one binary operation includes acts of performing a logical AND operation on the values stored in the one or more bit fields of the second data structure using each of the at least one mask to generate intermediate

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results, and combining the intermediate results using at least one logical OR operation to generate the at least one result.